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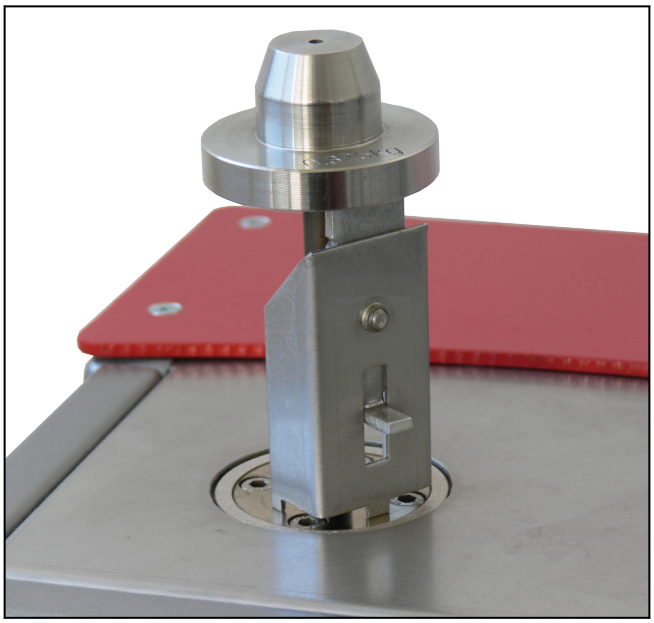
Product Information

Cflow extrusion plastometer

CTA: 45355 45362



Applications

Cflow is a compact instrument for rapid checking of the melt mass flow rate of plastics as per Method A.

It is primarily designed for plastics processors with a less frequent need for extrusion tests and no requirement for connection to a PC.

Cflow is intended for MFR tests to Method A. Tests can be performed in accordance with the following standards:

- Method A as per ISO 1133, ASTM D1238, ASTM D3364, JIS K 7210.

The instrument can quickly be checked using the test granulate included in delivery. It is also possible to check the temperature in the extrusion barrel and the diameter of dies and barrels using plug gauges.

Advantages and features

- Temperature control of the heating elements, heating chamber and barrel are all perfectly co-ordinated. The temperature is generated at the location where it is utilized, ensuring excellent temperature distribution over the whole barrel height from the outset.
- Simplified cleaning, with rapid expulsion of residual specimen material.
  - The die plug is located on the underside of the extrusion barrel. Removing the die plug frees the die to move downwards, allowing it to be removed easily.
  - Expelling the die plus residual material after the test is similarly fast and easy. The barrel is now accessible throughout., simplifying cleaning.
- The optionally available test weight support allows you to retain the test weight in the pre-heating position.
- Comprehensive accessory range including automatic or manual extrudate cutter, separating pane and die plug is optionally available.

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Technical data

Basic instruments

It is not possible to connect the instrument to a PC.

Type Item No.	Cflow extrusion plastometer (230 V) 1086645	Cflow extrusion plastometer (110 V) 1086646	
Test load	0.325 ... 21.6	0.325 ... 21.6	kg
Dimensions			
Height with all weights	850	850	mm
Width	325	325	mm
Depth	404	404	mm
Weight, approx.	18	18	kg
Test temperature	+120 ... +400	+120 ... +400	°C
Display	Two-line set/actual temperature display, illuminated	Two-line set/actual temperature display, illuminated	
Resolution of the temperature display	< 0.1	< 0.1	K
Temperature accuracy in a range of 0 ... 75 mm above the die in the temperature range of 190 °C ... 300 °C	< 0.3[1)]	< 0.3[1)]	K
Error limit of time measurement (Method A)	±0.02 (with automated extrudate cutter)	±0.02 (with automated extrudate cutter)	s
Scope of delivery	• Weights for load stages 325 g and 2.16 kg • Specimen hopper • Cleaning accessories (cleaning piston, cleaning brush, cleaning pads (500 pieces)) for barrel • Test granulate and filling chute for granulate		
Power input specifications			
Power supply	220 to 240 V, 1L/PE/N	100 to 127 V, 1L/PE/N	
Power consumption (full load), approx.	0.6	0.6	kVA
Power frequency	50/60	50/60	Hz

1) Spatial and temporal, to ISO 1133-2

Accessories required

Extrusion barrel (1 x required)

An extrusion barrel must be chosen to suit the materials to be tested. Different plastics containing fluoride, such as PTFE and PFA, release hydrofluoric acid, which corrodes the material of the extrusion barrel. For these types of plastics, extrusion barrels made from a special type of steel alloy are used.

Test material	Diameter, inner [mm]	Properties	Item No.
Plastic, not containing fluorine	9.55	Wear-resistant	087025
Plastic, containing fluorine / not containing fluorine	9.55	Acid-resistant, wear-resistant	1069371

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Piston (1 x required)

At least one piston must be selected, in accordance with the materials to be tested. Various plastics (e.g. PTFE and PFA) which contain fluorine release hydrofluoric acid, which attacks the extrusion barrel material. For these plastics pistons made of a special steel alloy are used. These pistons have only limited suitability for filled plastics. For these the wear-resistant version is recommended. For tests to ISO 1133-1997, a piston with non-rounded edges (sharp-edged) is required.

Test material	Standard	Test load [kg]	Properties	Item No.
Plastic, fluorine-free	ISO 1133	0.325	Wear-resistant	001336
Plastic, containing fluorine	ISO 1133	0.325	Acid-resistant	001340
Plastic, fluorine-free	ISO 1133 (1997)	0.325	Sharp edged, wear resistant	001350
Plastic, fluorine free	ASTM D1238	0.325	Wear-resistant, Generation 1	1007541
Plastic, not containing fluorine	ASTM D1238	0.325	Wear-resistant, Generation 2, with guide sleeve	1067173

Dies (scope of supply 2 pieces, 1 x required)

At least one die pair must be selected. It should suit the materials to be tested. Scope of delivery: 2 pieces + cleaning rod.

Item No.	312342	325554	001351	092326	
Material	Sintered material	Sintered material	Sintered material	Sintered material	
Test material	Plastic, containing fluorine, not containing fluorine	Plastic, containing fluorine, not containing fluorine	Plastic, containing fluorine, not containing fluorine	PVC	
Standard	ISO 1133 and ASTM D1238	ISO 1133 and ASTM D1238 Method C	BS 2782-7, Method 720A-1997	ASTM D3364	
Dimensions					
Length	8	4	8	25.4	mm
Diameter, inner	2.095	1.05	1.18	2.095	mm
Properties	Wear-resistant, acid-resistant	Wear-resistant, acid-resistant	Wear-resistant, acid-resistant	Wear-resistant, acid-resistant	

Optional accessories

Extrudate cutters

The manual extrudate cutter is recommended for cutting intervals greater than one minute. For short cutting intervals use of the automatic extrudate cutter is recommended in order to obtain precisely timed cuts.

Description	ArticleNumber
Extrudate cutter, manually operated	**087032**
Extrudate cutter, automatic operation, automatic control via time interval or manually via push-button, including replacement blades (4x)	**1086648**

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Weights

Depending on the plastic being used, the extrusion plastometer can be fitted with different test weights. 2.16 kg are included in the delivery of a basic instrument.

Test load [kg]	Required for this	Item No.
5	-	001380
5/10	-	001381
5/10/15/21.6	-	001443
1	-	001385
1.05	-	001386
1.2	-	001387
3.8	-	001459
12.5	Test weights with test loads 5/10 kg (Item No. 001381)	001389
(ASTM D3364) 20	Test weights with test load 5/10/15/21.6 kg (Item No. 001443)	008077

Weight support

Description	ArticleNumber
Weight support for retaining the weights in the preheating position, can be adjusted steplessly with setting marks at 50, 60, and 70 mm.	**026875**

Separating pane

Description	ArticleNumber
Separating pane for automatic extrudate cutter, for collecting individual extrudates	**001379**
Separating pane for manual extrudate cutter, for collecting individual extrudates	**087039**

Die plug

The die plug prevents premature outflow of the material when plastics with high flow-rates (> 10 cm3/10 min at load 0.325 kg) are being tested. When the die plug is in use, an extrudate cutter is required in order to eject the die plug automatically when the test begins.

Description	ArticleNumber
Die plug for testing plastics with high flow-rate; ceramic plug included[1)]	**087031**

1) Required: 1x extrudate cutter